EXCERPTS FROM PETITIONERS' PRINCIPAL BRIEF FILED IN THE COURT OF APPEALS

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I. STATEMENT OF THE ISSUES

A. Validity

1. Was it error to evaluate validity on the basis of a definition of invention which evolved in the course of the litigation and which was inconsistent with the patent and the prosecution history?

2. Was the patent proven invalid under 35 U.S.C. § 103?

3. Did the Trial Court commit an abuse of discretion in denying FATA's motion for a new trial?

FATA answers these questions: YES.

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VI. SUMMARY OF THE ARGUMENT

1. The Trial Court erred in basing the evaluation of validity on a new definition of invention which evolved during the proceedings and which was never claimed or argued to the Patent and Trademark Office. This approach makes it impossible for responsible competitors to objectively assess the patent's scope and strength on the basis of the public record.

2. The Trial Court erred in its finding that the claimed invention was not proven obvious. The legal conclusion was based in part on a fact finding which is clearly erroneous; i.e., the finding that McMellon was the first to put the lost foam operating stations on-line. It was based in part on the

impermissible use of a pragmatically developed concept of invention inconsistent with the file history and, therefore, in violation of *Graham v. John Deere*, 383 U.S. 1 (1966).

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VII. ARGUMENT

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B. Permitting a Patent Owner to Develop a Rationale for Invention in Trial Which Conflicts with the Patent's Prosecution History and the Evidence Is Inimical to the Constitutional Intent Behind the Patent System and in Violation of *Graham v. John Deere*, 383 U.S. 1

To be sure, protecting the legitimate rights of the patent holder who satisfies the statutory standards of the patent laws is important in fulfilling the constitutional mandate of promoting the progress of science and the useful arts. But to ensure that a patent does not *impede or reverse progress*, it is equally important to give accurate notice to the public of the boundaries of the patent's exclusionary power and to create a record from which the grant rationale can be appraised. Both this Court and the U.S. Supreme Court have repeatedly stressed the importance of notice and the creation of a public record from which competitors can determine how to safely proceed:

> *". . . . the standard for determining what subject matter was surrendered is objective and depends on what a competitor, reading the prosecution history, would reasonably conclude was given up by the applicant." (emphasis added).*

Insituform Tech. Inc. v. CAT Construction, Inc., 99 F.3d 1098 (Fed. Cir. 1996). The force and integrity of a patent is indicated not only from claim language but also from the grant rationale.

> "Here the patentee obtained his patent only by accepting the limitations imposed by the Examiner. The claims were carefully drafted to reflect these limitations and Cook Chemical is not now free to assert a broader view of Scoggin's invention. The subject matter as a whole reduces, then, to the distinguishing features clearly incorporated into the claims."

Graham v. John Deere, 383 U.S. 1 (1966).

The validity of Vulcan's patent reduces to the recitation of "registration means" and cannot be saved by some other rationale.

To start with, the term "on-line" does not appear anywhere in the patent and there is no indication in the patent file history that the Examiner ever used the term or would have understood it if it had been presented to him in argument in favor of patentability. The prosecution history conveys a vivid picture of *registration* as the invention.

The amendment of claim 14 to include the recitation of "registration means" was tantamount to an administrative finding that it was obvious to use a linked-carriage conveyor such as Wright for lost foam casting and that claim 14 as filed was not patentable. The immediate capitulation of Vulcan's counsel Robert Veal in amending claim 14 was tantamount to an admission that Vulcan agreed with the Examiner and added "registration means" to make the claim allowable. Robert Veal, present throughout the trial, did not take the stand to rebut the obvious inference from the

prosecution history. Thus, it can be presumed that "registration means" is critical to patentability. *Warner-Jenkinson v. Hilton Davis Chem.*, 520 U.S. 17 (1997).

The term on-line appears for the first time in the paraphrased definition of the invention used by the Court in its Corrected Order on Claim Construction, Exhibit A to the Amended Opinion. A59. It does *not* appear in the element-by-element claim construction charts. A60-73.

After its examination of Bruce McMellon as quoted above, the Trial Court simply re-wrote the claims and used a different concept of invention when appraising the impact of the prior art on validity. This violated the instruction of *Graham v. John Deere* which requires the Court to evaluate validity on the basis of what the prosecution history reduced the invention down to. It is also a revisionist approach outlawed in, for example, *Texas Inst. v. United States ITC*, 988 F.2d 1165 (Fed. Cir. 1993).

C. The Prior Art Rendered the Claimed Invention Obvious

1. The Prior Art Teaches On-Line Operations

To start with, the Trial Court's important fact finding that McMellon was the first to put the operating stations "on-line" is clearly erroneous. A20.

At Fredonia the operating stations were all on-line and the Trial Court so found. A37. The same was true of *John Deere*. A37-38. The Burchell article is further evidence that this fundamental concept was well known in the art. A 1517-1530. This concept of alleged invention does not support validity of the patent. A278; A280; A293-294.

Going beyond that, Fredonia shows us that the particular registration means disclosed in the patent was known in the art. A1531-1532. This should have been conclusive of the invalidity of the patent under the *Graham v. Deere* rationale quoted above. To be sure, a Patent Office Examiner who knew about Fredonia and/or Burchell would have rejected claim 1 on the combination of Wright and Fredonia or Burchell. A1473-1485; A1531-1532; A1517-1530. The convincing line of reasoning which is required for such a rejection is simple: if it is obvious to use a linked-carriage conveyor for lost foam casting (as Vulcan effectively admitted), it is obvious to add "registration means" to it per Fredonia or Burchell. A1520; A1524; A1532; A608-610; A613-615. Moreover, the compactor doesn't know and doesn't care whether the gondola carrying the flask is connected or disconnected from adjacent gondolas as long as it is in a stationary queue as Burchell describes. A 1520. It would have been difficult to overcome this line of reasoning with or without secondary considerations such as commercial success.

2. Rochester Products Was Prior Art

If the Trial Court is wrong in its legal conclusion that Rochester Products turntable system is not prior art, then it too bears on the issue of obviousness. The Rochester Products system had both on-line compaction and a "registration means" virtually identical to that disclosed as the preferred embodiment of the patent. Moreover, unlike Fredonia, the flask-to-flask spacing is fixed and they are hydraulically driven to move synchronously through the stations. Thus it supports the proposition that it would be obvious to use a synchronous carriage conveyor if more flasks were required.

Patz, who was photographed at the installation site, testified that the system was built, sold, installed and used to make aluminum castings. A357-358; A1536-1549.

Donald Read, a GM engineer on the project, testified the system was operational. A 1535. Bond, who sold Rochester the GX compactor testified similarly. A1533-1534; A716-717. McMellon's testimony may support the notion that Rochester Products used the apparatus for *process experimentation*, but this does not mean that the *apparatus* was experimental. To so find risks circumvention of the intent behind the on-sale bar. *RCA Corp. v. Data General Corp:*, 887 F.2d 1056 (Fed. Cir. 1989).

FATA submits that Rochester Products was prior art.

3. The Denial of Fata's Rule 59 Motion Was an Abuse of Discretion

FATA covered one more base with its Rule 59 Motion. It found and presented the 1904 Sherman patent to show all of the operating stations of a casting operation on-line with a linked carriage conveyor. A429.1-429.7. This very old patent shows beyond question that on-line compaction can be applied to synchronous conveyors. It was an abuse of discretion to refuse to consider this patent when it was presented. The public's interest in identifying invalid patents should have prevailed over the concept that validity evaluations are not "a continuous process." A6.

FATA and its counsel could hardly have been more diligent in their pursuit and discovery of the Sherman patent as prior art. The Court's Opinion issued in late July and the entry of judgment was still over a year away. No one would have been prejudiced and the Trial Court's refusal to consider it for substance is in conflict with its own principles: "Claim construction should be reconsidered if subsequent proceedings or the trial record reveals aspects not apparent at the time of the initial decision." A14.

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EXCERPTS FROM PETITIONERS' REPLY BRIEF FILED IN THE COURT OF APPEALS

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II. THE TRIAL COURT'S PRAGMATIC RE-DEFINITION OF THE PATENTED INVENTION DENIES FATA THE RIGHT TO RELY ON THE PUBLIC RECORD OF THE PATENT-IN-SUIT

The application leading to the patent-in-suit was presented with two independent claims, 1 and 14. A1445-1449. Subsequent to a telephone interview between Examiner Siedel and attorney Veal, claim 14 was amended to modify the structural limitation pertaining to "registration." The amendment was made for purposes relating to patentability and the pertinent explanation was provided by Examiner Siedel in his "reasons for allowance." A1459-1461.

Any responsible competitor seeking to evaluate the scope and validity of the patent-in-suit will be drawn to the conclusion that the limitation pertaining to "registration" in each of claims 1 and 14 was critical to patentability and that, in the absence of this limitation, the claims would not define patentable subject matter.

The proposition that competitors are entitled to rely on the objective evidence of the public record is beyond debate. It was stated by the Supreme Court in *Graham v. Deere*, 383 U.S. 1 (1965) and by this Court in many cases including *Litton System, Inc. v. Whirlpool Corp.*, 728 F.2d 1423 (Fed. Cir. 1984). In *Litton*, this Court applied an estoppel principle to a patent holder who attempted to switch strategies after agreeing to a Patent Office requirement to designate a continuing application as a C.I.P.

> "Litton is now estopped from showing that the prosecution record is not true and that what Litton

> then called a C-I-P in response to a new matter rejection does not contain new matter. Because Litton's ultimate goal in submitting the C-I-P declaration was to secure a patent and because the patent was issued as a direct and immediate result of Litton's actions, we see no reason not to extend the traditional estoppel doctrine here.
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> * * *
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> A patent attorney is often faced with choices during a patent prosecution. If an attorney or patentee makes a mistake, the PTO permits the patentee to institute reissue or reexamination proceedings in certain instances. The patent attorney should not be able, however, to choose one course of action within the PTO with the anticipation that, if later checked, he or she can always choose an alternative course of prosecution in a trial before a federal Judge."

Litton, 728 F.2d at 1439.

Vulcan cannot argue that the amendment to claim 14 during prosecution of the patent-in-suit was not material, was not related to patentability and/or does not create any form of estoppel.

Vulcan now asks this Court to believe that the added recitation of a registration means is not at all material to the invention and that the discovery of registration means in the prior art has no adverse impact on the patent's validity. Vulcan bolsters its argument by pointing to the fact that neither the abstract nor the summary of invention even mentions the registration means (Appellee's Brief, p. 4).

Vulcan struggles to validate a hypothetical patent claim which recites nothing more than a casting conveyor with pivotally interconnected gondolas and "on-line" lost foam operating stations simply because this claim was created by the Judge in his own examination of Bruce McMellon. But, this claim is inconsistent with the public record and inconsistent with 35 U.S.C. § 112 in that it contains limitations which cannot be found anywhere in the written disclosure.

Vulcan adds a "throw-away" argument to the effect that the amendment to claim 14 should not be considered because, after all, the trial revolved around claim 1 and it was never amended. But the trial court characterized claim 1 as a "paradigm" claim which serves as a pattern of the exclusionary rights being asserted in this case. A176. Allowing prosecution estoppel to be avoided through the careful selection of "paradigm" claims which were not amended when substantively identical claims would render the doctrine of prosecution history estoppel meaningless as it has been recently defined by this Court in *Festo Corp. v. Shoketsu Kinzoku Kosyo Kabushiki*, 234 F.3d 558 (Fed. Cir. 2000).

III. THE INVENTION OF CLAIM 1 WAS OBVIOUS IN LIGHT OF THE PRIOR ART

A. Factual Record

The record in this case proves the following acts, facts or propositions beyond reasonable debate:

(1) conveyors with linked carriages were known for use in casting operations. A210, A1473;

(2) the lost foam process was developed and patented by Harold Schroyer in the 1950's. A1486-1492;

(3) accumulating conveyors had the advantage of flexibility; i.e., if there were open spaces between gondolas rather than fixed links, the conveyor could be used to simultaneously cast different parts with different process step times; A196;

(4) on the other hand, accumulating conveyors had notorious disadvantages including complexity, cost and reliability; A196;

(5) when the number of gondolas increases so that the total length of the gondola train approaches or equals the total length of the conveyor track, the difference between linked and nonlinked carriage conveyors disappears; A234;

(6) the mathematics associated with the design of a linked gondola, synchronously moving conveyor for application to lost foam casting are "very, very simple"; A234;

(7) in its bid documents, Saturn specified the fact that its conveyor lines would be dedicated to single products with known cooling times and production rates; A279-281;

(8) the Planet conveyor sold to Fredonia had carriages, flasks, a closed loop track, a vertical compactor, pins and bushings for registration and was applied to lost foam; A1417, A476-477;

(9) the Rochester Products turntable was sold by Planet Corporation to Rochester Products on a date which makes it prior art under 35 U.S.C. § 102(b); A475. The system had fixed spacing between flasks on the turntable,

synchronous movement of the flasks between stations, an on-line vertical compactor and a registration apparatus virtually identical to that described in the patent-in-suit; A1536-1542, A2205-2208, A358; and

(10) the file history of the patent-in-suit shows no attempt whatsoever to argue that it was inventive to apply a known conveyor to lost foam casting, and no use of the term "online" to describe the association between any operating station and the conveyor. A1418-1472.

B. The Validity Issue

The record of prosecution in the Patent Office puts a fine point on the dispositive issue relating to invalidity: the Examiner thought that Vulcan's specific form of flask "registration" was new. Once it was determined that the specific registration means was not new the claimed invention as a whole was *prima facie* obvious and it was impermissible for the trial court to create a new rationale for patentability, and new specific limitations (on-line) to save the patent.

While Vulcan argues that there was an "engineering consensus" to the effect that only accumulator conveyors could be used in lost foam casting, there are important contradictions:

(1) The "consensus" appears to be limited to a few people at OMC and is nowhere documented;

(2) in prior lost foam applications, the accumulator conveyor had always been used to make multiple parts with different cooling times; A197;

(3) the accumulator conveyor had a number of known disadvantages including complexity, unreliability and cost; A196; and

(4) there are no technical reasons whatsoever why the linked-gondola conveyor cannot be applied to lost foam casting just as it was to other more common casting technologies.

Vulcan argues that conveyors with un-linked gondolas were believed essential for "efficiency." And while the patent speaks of efficiency, there are no numbers given anywhere to support any conclusions regarding efficiency at all!

The explanation lies in the testimony of FATA's expert witness Greg Sanders. First, Sanders testified without contradiction that Saturn was the first instance of an automaker stating that it wanted separate conveyors dedicated to specific products; i.e., Saturn asked for separate conveyors for the engine block and cylinder head lines and provided the bidders with production rate figures which would be necessary. A278-281 As Sanders explains, the casting conveyor engineer would logically sit down with every kind of known casting conveyor before him and would consider its application to this task. Because, as McMellon acknowledges, the mathematics are "very, very simple," and the disadvantages of the accumulator conveyor are well known, it doesn't take long for the skilled conveyor engineer to determine, as McMellon did, that the prior art linked carriage synchronous conveyor is as applicable to lost foam casting operations as it is to any other type of casting.

Sanders' logic is unassailable and the idea that any competent casting engineer couldn't see it is poppycock. A278-279. If one is required to make 80 engine blocks per hour, an engine block must arrive at the dump station every 45 seconds *whether gondolas carry them are connected or not.* Each station including the compactor must be able to complete its task in 45 seconds or the production rate target cannot be achieved. A213. It makes absolutely no difference

whether the gondolas are linked or simply queued up because, in either case, they move through the compaction station one at a time. The John Deere gondolas were *disconnected* but they moved through compaction one at a time. A215. Logic tells us that as the track length approaches the total length of the gondola train so as to reduce or eliminate the gaps between gondolas, the difference between linked and non-linked gondola conveyors goes to zero and it is as obvious to use one as the other.

To suggest that it took an act of clairvoyance to see that the known, linked carrier conveyor would work just fine for lost foam is nonsense! To allow Vulcan to patent a known conveyor which was a clear choice at the time McMellon claims to have made it not only fails to promote progress in the useful arts, it takes away a choice that the casting system designers had used since 1904. The "engineering consensus," admitted by McMellon to be unsupported by documentation or survey evidence, is nothing more than the creative argument of trial lawyers. In any case, the "engineering consensus" evidence is trumped by the clearer logic of Sanders in his explanation of how the ordinary engineer would approach the problem of dealing with a single product dedicated line for lost foam casting.

IV. THE TRIAL COURT SHOULD HAVE CONSIDERED BOTH SHERMAN AND ROCHESTER PRODUCTS IN EVALUATING OBVIOUSNESS

The Sherman patent discloses a pivotally linked carriage conveyor with online operating stations including mold building and compaction. A429.1-429.7 It negates Vulcan's argument and the trial court's finding that mold building (compaction) was never done online in green sand casting and undermines Vulcan's central argument for non-obviousness. The only impediment to the consideration of

Sherman as prior art is the fact that it was brought to the trial court's attention between the liability and damages trials. FATA submits that the trial court's refusal to consider Sherman was an abuse of discretion. Vulcan's patent has been demonstrated to have a substantial impact on commerce in the United States; i.e., Vulcan's proofs of commercial success show beyond question that the patent confers monopoly power in a market worth millions of dollars annually. Contrast this with the inconvenience associated with making the Sherman patent part of the record in this case for purposes of appeal and/or reconsidering fact findings which are plainly erroneous in view of the Sherman patent, and it is apparent that an injustice has been done.

Turning to Rochester Products, the trial court based its findings that the Rochester Products turntable device was not prior art on the testimony of Bruce McMellon that there was limited access to the Rochester Products plant and that the device did not appear to be heavily used. Yet McMellon admitted that his appraisal of use was merely an "opinion" and that he had no reasons to believe that the device had not been built by Planet and sold. A234.

The fact that the device had been ordered, manufactured and sold established by the testimony of Murray Patz, the only witness with personal knowledge of the relevant event. A358, A1539-1542.

The fact that the trial court chose to attack Patz' credibility on unrelated issues does not upset the fact that the turntable device was made and sold and is prior art for obviousness evaluation. ***Milliken Res. Corp. v. Dan River***, 739 F.2d 587 (Fed.Cir. 1984). The Rochester Products device demonstrates the use of flasks with fixed spacing moving synchronously and intermittently through a plurality of lost foam casting stations. It is not technically difficult to see the

relationship between an intermittently-moving turntable and an intermittently-moving, daisy-chain conveyor. The differences are merely matters of volume and shape!

It was legal error for the trial court to rule the Rochester Products' turntable out of the relevant prior art to be considered in evaluating the validity of the patent-in-suit.

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